SONY

3-756-461-21(1)

Handycam Marine Pack

MPK-TRA

Operating Instructions Page 2

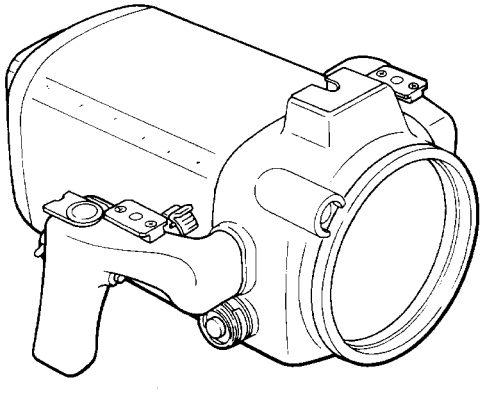
Before operating the unit, please read this manual thoroughly and retain it for future reference.

Mode d'emploi Page 18

Avant la mise en marche de cet appareil, prière de lire attentivement ce mode d'emploi et de le conserver pour toute référence future.

Manual de instrucciones Página 34

Antes de emplear la unidad, lea este manual detenidamente y consérvelo para futuras referencias.



Handycam

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For the customers in U.S.A.

WARNING

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- –Reorient or relocate the receiving antenna.
- –Increase the separation between the equipment and receiver.
- –Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- –Consult the dealer or an experienced radio/TV technician for help.

You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

For the customers in Canada

This apparatus complies with the Class B limits for radio noise emissions set out in Radio Interference Regulations.

This mark indicates that this product is a genuine product related to our 8 mm video equipment.
When purchasing 8 mm video equipment provided with this mark, we recommend that you purchase related 8 mm video products provided with the same mark or products provided with our logotype mark.

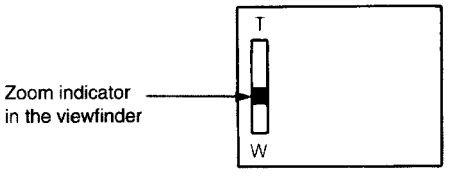
Features

The MPK-TRA marine pack allows the following 8 mm video camera recorders to be used underwater.

CCD-TR4 **CCD-TR5** **CCD-TR7**
CCD-TR31 **CCD-TR51** **CCD-TR71**
CCD-TR81 **CCD-TR101** **CCD-TR200**
CCD-FX310 **CCD-FX410** **CCD-FX510**
CCD-FX710
(The illustrations are of the CCD-TR101.)

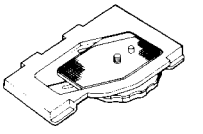
- **Recording at a depth of 75 meters (246 feet) is possible.**
- **The following operations can be performed underwater.**
  Power on/off
  Auto focusing on/off (Except for CCD-FX310/FX410)
  Recording start/stop
  Power zooming

If there are dust or specks in focus on the front glass of the marine pack, move the power zoom lever towards the T (telephoto) side slightly so that the zoom indicator inside the viewfinder moves towards T. (See the illustration below.)

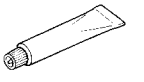


Since the refractive index underwater is higher than that in air, an object is visible by 1/4 more closely, and therefore larger. This phenomenon affects the lens on the video camera recorder as well as the human eye. Using a **wide-conversion lens** is recommended. (You cannot attach a wide conversion lens to a CCD-FX model to use it with this marine pack.)

Supplied Accessories


Adaptor (1)

O-rings (2)


Grease (1)

Precautions

On the video camera recorder

Take care not to expose the equipment to salty air nor to drip water on the equipment.

- Do not open the marine pack on the sea or at the seaside. Preparations such as installing and checking the equipment should be made in a place with low humidity and no salty air.
- When a video camera recorder is to be used by the sea for a long time, we recommend that they are checked periodically by a Sony service facility.
- If the equipment becomes wet, take it immediately to the nearest Sony service facility for preventive maintenance.

On power source for the video camera recorder

Use the battery pack **NP-77H**, **NP-77HD**, or **NP-S88**.
For the **CCD-TR200**, use the **NP-500**.

On the marine pack

- If you put the marine pack in the water after you opened and jointed the front and rear shells in a place with high temperature and high humidity, moisture condensation may occur, causing the glass to fog up.
- The waterproof integrity of the marine pack is maintained by the O-ring, and the groove and surface where it touches. Be especially careful not to damage or deform that area.
- Do not leave the marine pack under direct sunlight for a long period of time, otherwise the temperature in the marine pack may rise and the equipment in the marine pack may be damaged.
- If you cannot avoid leaving the marine pack under direct sunlight, be sure to cover the marine pack with a towel or other protection.
- Do not throw the marine pack into the water. Lower it gently into the water.

On recording underwater

- Check that the equipment operates correctly and there is no water leak at a depth of about one meter (3 feet) before you dive deeper.
- Be sure to follow the safety rules for diving such as diving period and depth.
- Remove the bubbles from outside of the front glass.

Sony does not accept liability for damage to the video camera recorder, battery, etc. in the marine pack and for the cost of recording if water leak occurs caused by incorrect operation.

On maintenance

After recording in the sea, submerge the marine pack with the buckles tightly fastened in fresh water for a while to remove the sea water. Then rinse it with fresh water and dry it with a soft cloth.

- Every time after you use the marine pack and the video camera recorder underwater, clean the video camera recorder and inside of the marine pack with a dry soft cloth. Do not use any type of solvent, such as alcohol or benzine for cleaning, as this might damage the finish.
- When you store the marine pack, grease the O-ring, put it in the groove correctly. Joint the front and rear shells and place it in a cool place without fastening the buckles. Avoid storing the marine pack in a hot or very cold place, in a place subject to direct sunlight or excessive dust, or together with naphthalene or camphor. This will damage the marine pack.

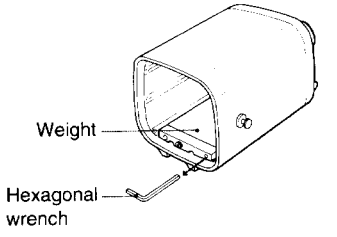
On transportation

- To transport the marine pack, be sure to remove the video camera recorder from the marine pack.
- To transport the marine pack by air or by car, use a marine pack carrying case (not supplied).

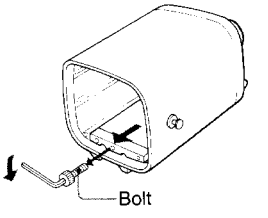
To remove the weight

You can remove the weight in the rear shell.

1 **Pull out the hexagonal wrench.**



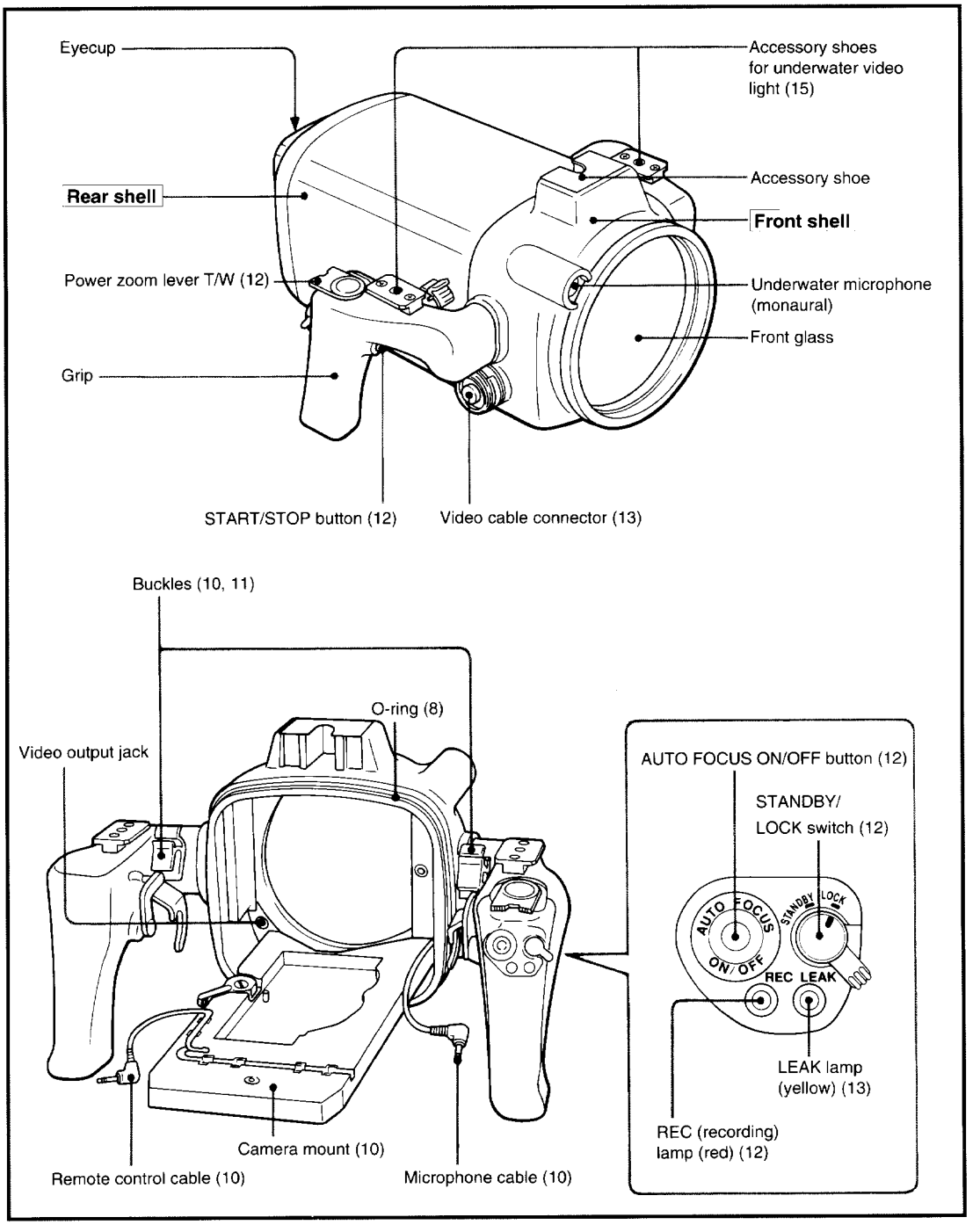
2 **Remove the bolt using the hexagonal wrench.**



When you use the marine pack, replace the weight as it was.

Labeling the Parts and Controls

• For the use of each part or control, see the pages indicated in parenthesis.



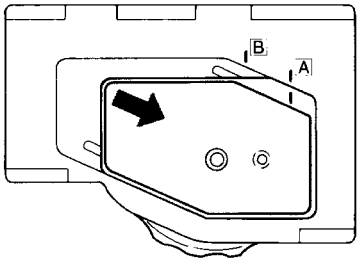
Position of the Adaptor and the Remote Control Cable

The position of the adaptor and the remote control cable depends on the model of the video camera recorder. Check the position for the video camera recorder you use.

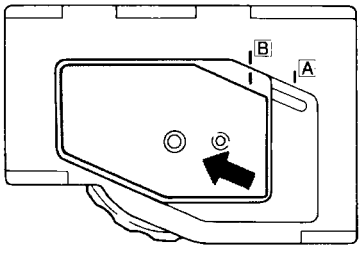
How to mount is explained in "Attaching the video camera recorder to the marine pack" on page 9.

Position of the mounting screw plate on the adaptor

A Slide the mounting screw plate until it locks.

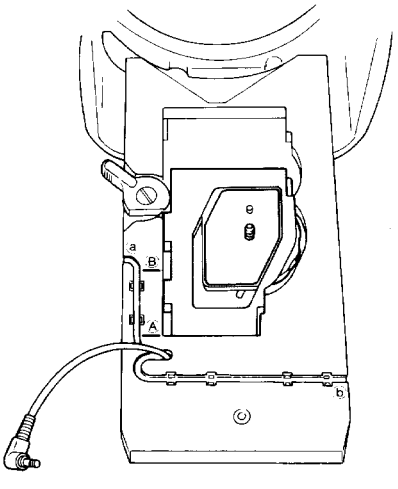


B Slide the mounting screw plate until it locks.

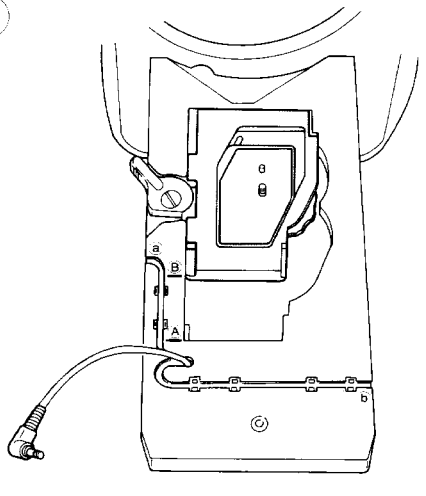


Position of the adaptor on the camera mount of the marine pack

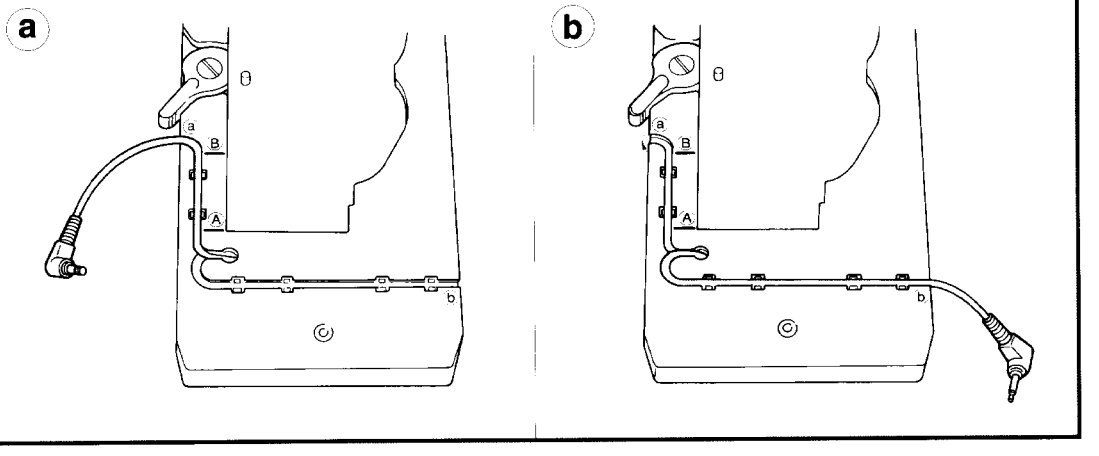
A



B



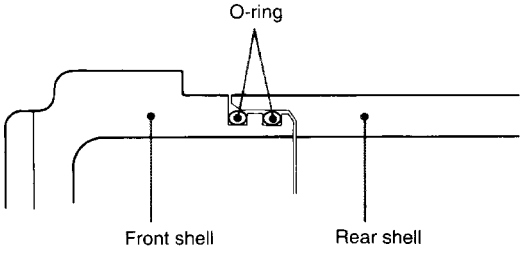
Groove to install the remote control cable



Video camera recorder CCD-	Position of the mounting screw plate on the adaptor	Position of the adaptor on the camera mount of the marine pack	Groove to install the remote control cable
TR4	A	A	a
TR5			
TR7			
TR51			
TR71			
TR81			
TR200	B	B	b
FX310			
FX410			
FX510			
FX710			
TR101	B	A	a
TR31	B	A	b

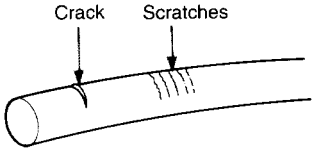
Notes on the O-ring

The O-ring assures the waterproof function of the marine pack. To maintain waterproof integrity, use it correctly. Incorrect handling may cause water to leak in.



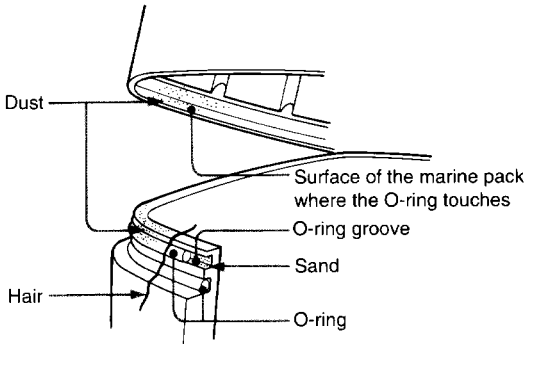
Check that there are no scratches or cracks.

Scratches or cracks on the O-ring may cause water to leak in. If there are any, replace the damaged O-ring with a new one. Do not remove the O-ring from the groove with a metal tool or a tool with a sharp point.



Remove any dust, sand or hair from the O-ring.

Check there is no dust, sand or hair on the O-ring, or in the groove or on the surface of the marine pack where it touches. If there is, remove them completely, or the O-ring and the surface of the marine pack may be damaged and water may leak in.

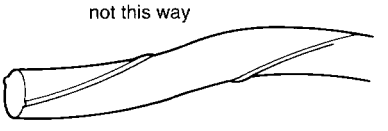


Grease the O-ring.

The grease protects the O-ring from wear.
Check that there are no cracks or dust on the O-ring, then grease it using a finger. During greasing, recheck that there are no cracks or dust.
Never use cloth or paper for greasing because the fibers may cling.
Do not use any type of grease other than the supplied one, or it may damage the O-ring.

Do not twist the O-ring.

Put the O-ring in the groove evenly. Never twist it.



Do not trap the O-ring with the marine pack.

When jointing the front and rear shells, take care not to trap the O-ring between the front and rear shells. If this happens, not only will the O-ring be damaged, but also water may leak in.

Storage

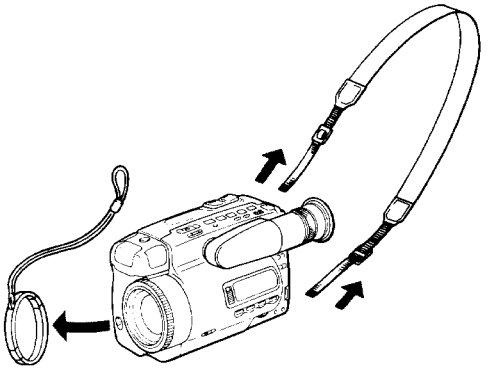
Put the supplied spare O-rings in the original carton and store it in a cool place.
- Do not expose the O-ring to direct sunlight.
- Do not place a heavy object on the O-ring.
- Do not fold the O-ring.

Useful life of the O-ring

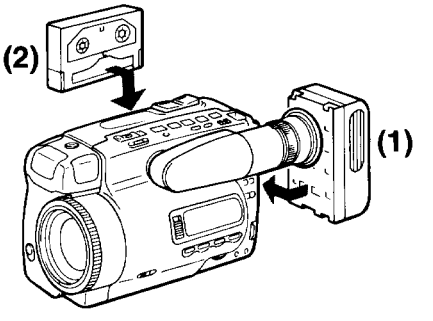
It depends upon the maintenance and the length of use, but we recommend changing it every one or two years. Use the Sony ACC-810M marine pack maintenance kit (not supplied) to replace.

Attaching the Video Camera Recorder to the Marine Pack

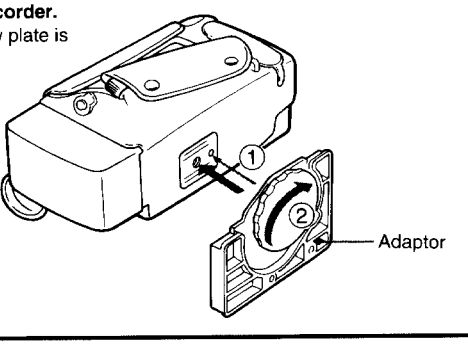
1 **Remove the lens cap, shoulder strap, filter, etc., from the video camera recorder.**



2 **Attach a charged battery pack (1) and a video cassette (2).**
If you use a wide conversion lens (not supplied), attach it as well (except for CCD-FX models, see page 15).

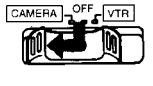


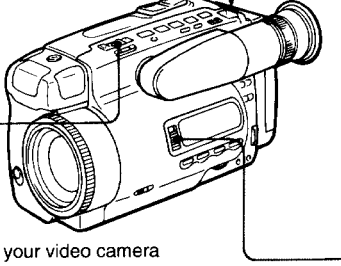
3 **Attach the adaptor to the video camera recorder.**
Check that the position of the mounting screw plate is correct. (See pages 6 and 7.)



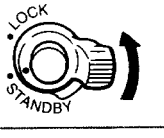
4 **Adjust the video camera recorder.**
Refer to the operation manual of your video camera recorder.
Do not pull out the viewfinder.

1 Set the POWER switch to CAMERA.





2 Set the STANDBY switch to STANDBY.



3 Release automatic adjustment mode and set to manual adjustment mode.

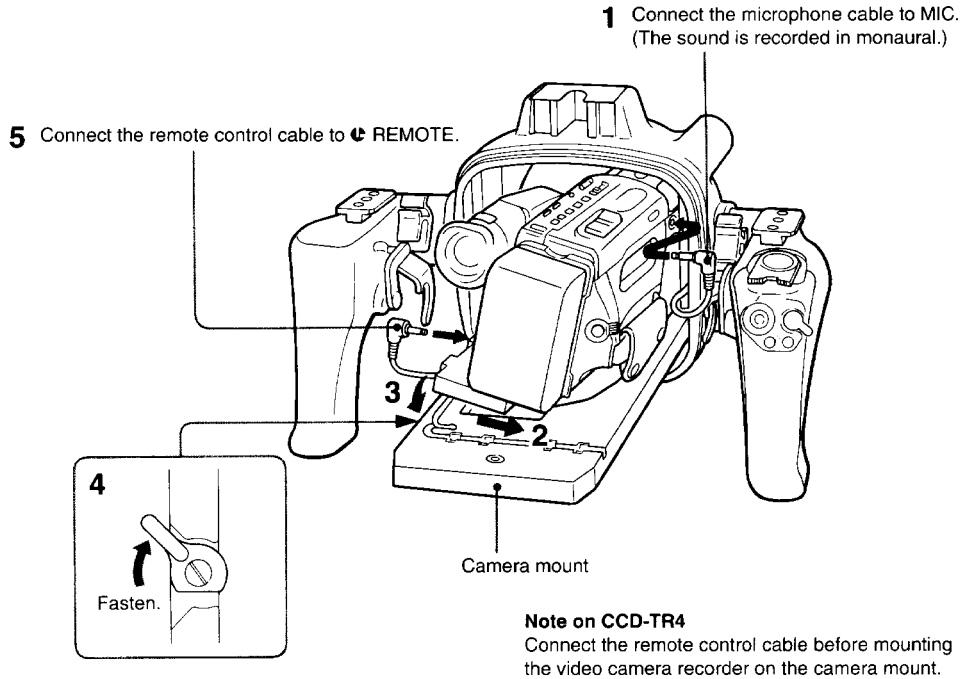
The following adjustments are needed when your video camera recorder has the corresponding function.
Refer to the operation manual of the video camera recorder for details.

White balance	Normally set to ☀ (outdoor). Set to 🔆 (indoor) for night diving.
Shutter speed	Set to where no indicator appears.
Program AE	Set to where no indicator appears.
Brightness	Turn off the indicator.

Note on CCD-FX310/FX410
Set the focus to auto focus mode.

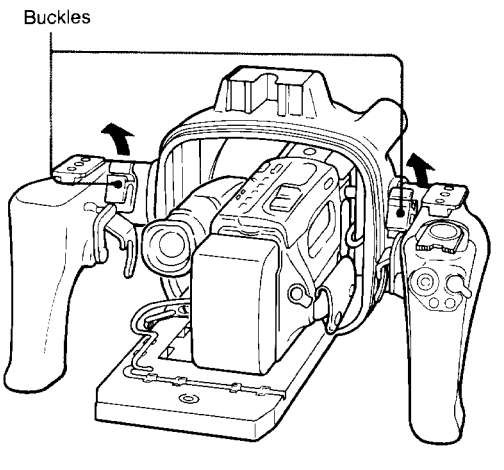
To be continued

5 **Attach the video camera recorder to the marine pack.**
Check the position of the adaptor. (See pages 6 and 7.)

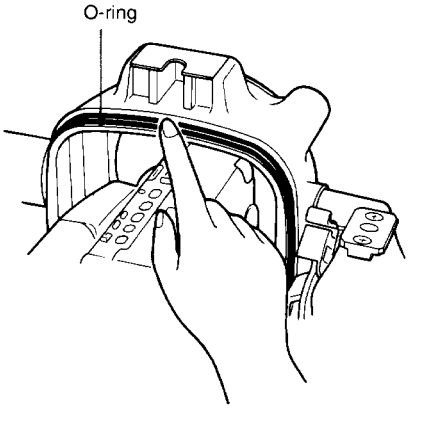


Note on CCD-TR4
Connect the remote control cable before mounting the video camera recorder on the camera mount.

6 **Raise the buckles until they stop.**

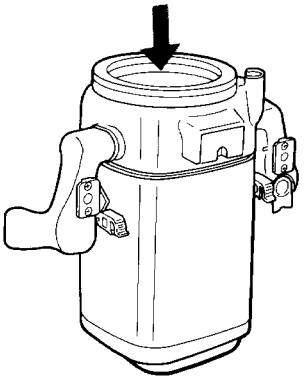


Check the O-ring and grease it slightly.

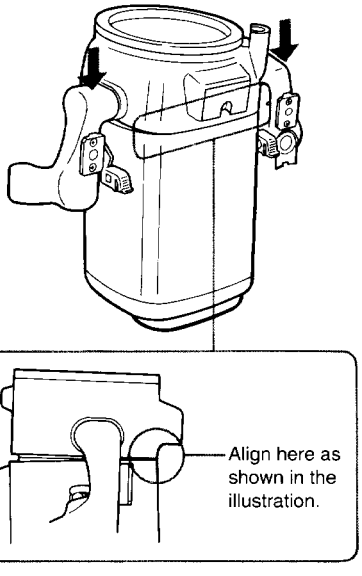


7 **Attach the front shell to the rear shell.**

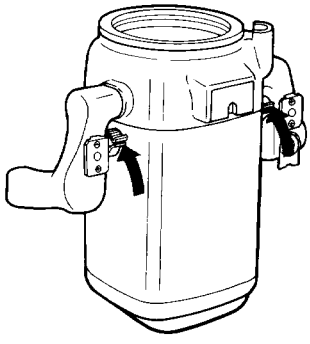
1 Put the front shell on the rear shell.



2 Press the top of both grips strongly.

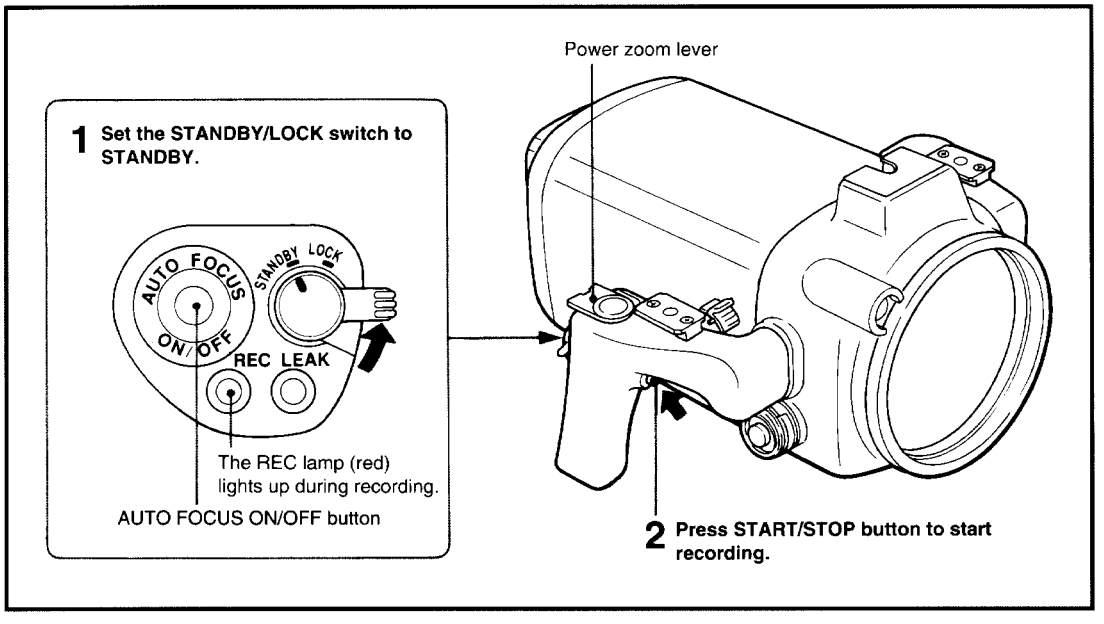


3 Lower both buckles at the same time until they are locked. You will hear a click.



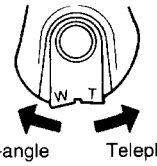
Now you are ready for underwater recording.

Set the STANDBY/LOCK switch of the marine pack to LOCK.
If you set it to STANDBY, the battery may be used up before recording.



To zoom

Slide the power zoom lever towards T for telephoto (subject appears closer) or W for wide-angle (subject appears farther away). You cannot change the zooming speed of the video camera recorder, even if your video camera recorder is adjustable.



Wide-angle Telephoto

When you set the power zoom lever to the full wide-angle position (macro), specks or bubbles on the front glass may come into focus. In this case, slide the power zoom lever a little towards T and return towards W.

To keep a subject in focus

After you focus on a subject, press the AUTO FOCUS ON/OFF button to set the video camera recorder to manual focus mode.
Even if fish swim between the video camera recorder and the subject, you can still keep the subject in focus.

Note on CCD-FX310/FX410
The AUTO FOCUS ON/OFF button is not operative for these models.
Set the video camera recorder to auto focus mode.

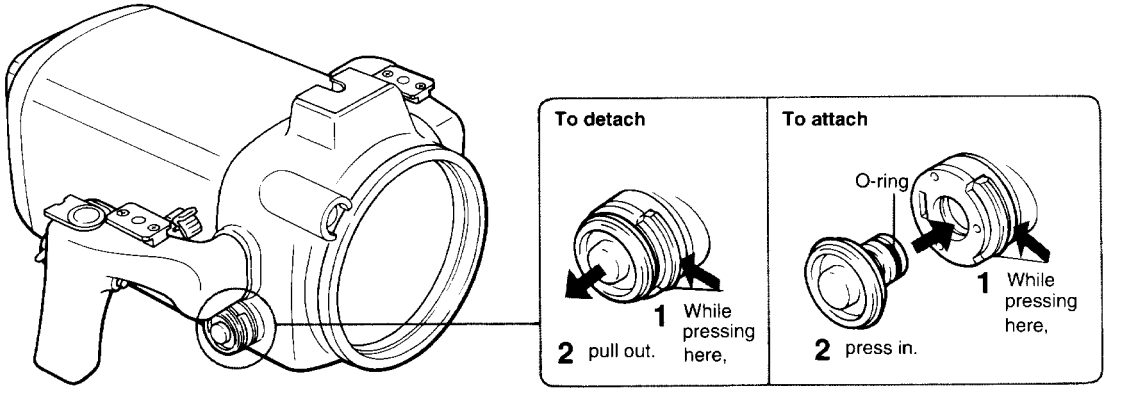
To stop recording

Press the START/STOP button.

To attach/detach the lid of the video cable connector

A video cable connector is provided so that video equipment can be connected to the marine pack in the future.

When you reattach the lid, grease the O-ring of the lid before inserting it into the connector.



Note

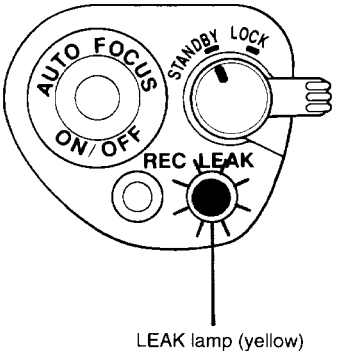
Do not detach the lid underwater.

When the LEAK Lamp Flashes

If water happens to leak in, the LEAK lamp (yellow) flashes.

In such a case, remove the marine pack from the water as soon as possible, keeping it horizontal. Be sure to surface following the safety rules for diving.
Dry the marine pack with a soft cloth and then open it.
To switch off the lamp, disconnect the remote control cable.
Check the cause of the leak.

If the video camera recorder is wet, take it to the nearest Sony service facility immediately.



Removing the Video Camera Recorder

Before opening the marine pack, rinse it with fresh water and dry with a soft cloth.

Note

When you open the marine pack, take care the following points to prevent the video camera recorder from getting wet.

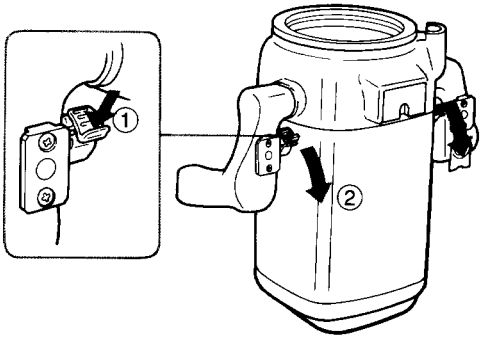
- Dry the marine pack well.
- Wipe off any water between the front and rear shells with a towel.
- Make sure you are dry. Take care that no water drops from your wet suit.

1 **Remove the accessories.**

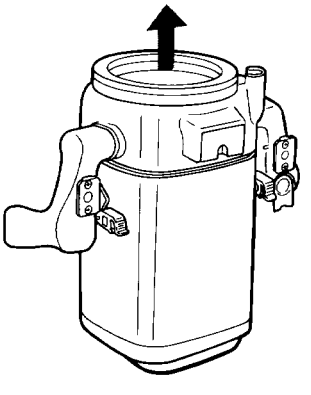
2 **Open the marine pack.**

1 Before opening the marine pack, rinse it with fresh water and dry with a soft cloth.

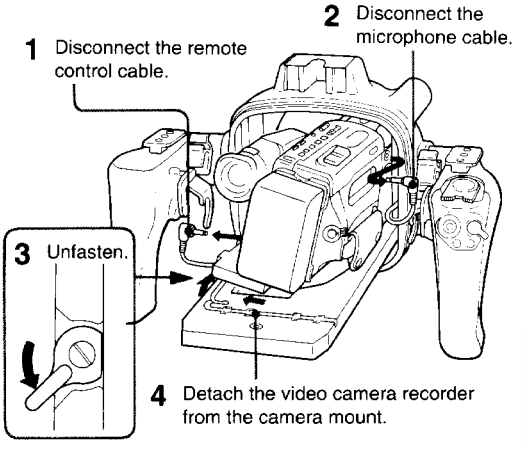
2 Unfasten the both buckles.



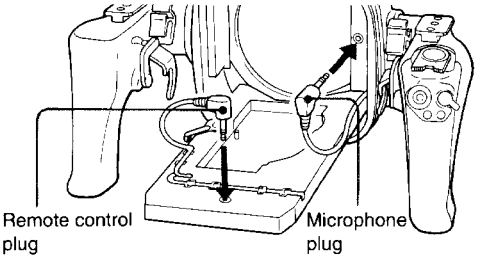
3 Remove the front shell.



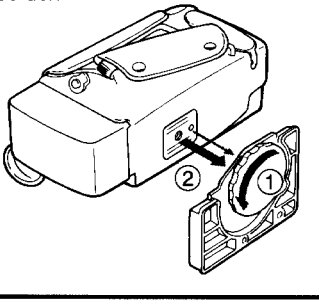
3 **Take the video camera recorder out of the front shell.**


1 Disconnect the remote control cable.
2 Disconnect the microphone cable.
3 Unfasten.
4 Detach the video camera recorder from the camera mount.

4 **Insert the remote control plug and the microphone plug where they were.**



5 **Remove the adaptor from the video camera recorder.**



Underwater Recording

Recording underwater is different from recording on land because it is affected by the clarity and depth of the water and the light conditions. The followings are hints for good recording underwater.

Color characteristics underwater

Water absorbs light, especially red light, so that objects in deep water are seen as bluish. The color of objects is affected by the clarity of the water.
To record in natural color, use the Sony VF-M150 color filter (not supplied).

Best time for recording

The best recording time is from 10:00 a.m. to 2:00 p.m. When the sun is high in the sky, optimum results can be obtained.

Subject size underwater

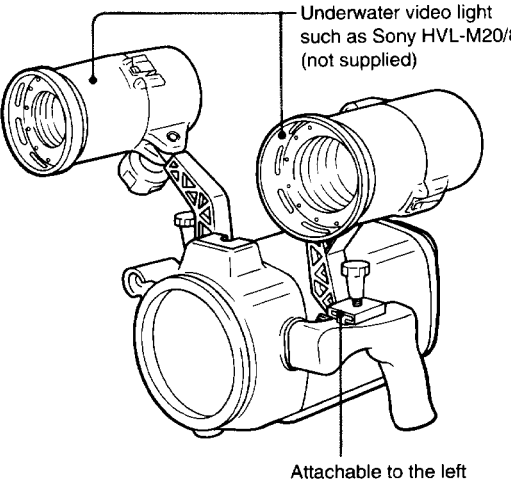
Since the refractive index underwater is higher than that in air, an object is visible by 1/4 more closely, and therefore larger. This phenomenon affects the lens on the video camera recorder as well as the human eye. Using a **wide-conversion lens** is recommended. (You cannot attach a wide conversion lens to a CCD-FX model to use it with this marine pack.)

Camera work in slow and stable motion

When recording, keep your body stable.
An unstable shot will be magnified on the TV screen. Move the video camera recording as slowly as possible. As most of the object underwater move, you can record a good program without moving the video camera recorder.

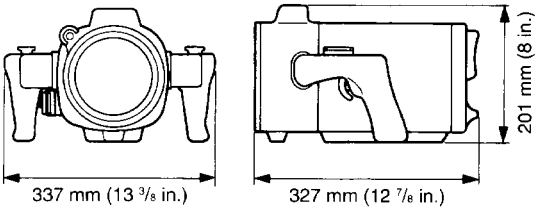
Underwater video light

In a deep water or under rocks where direct sunlight does not reach, recording with the underwater video light is recommended.
To record at night, use an additional powerful underwater video light.



Specifications

Compatible video camera recorder
See page 3.
Material Aluminum alloy, glass, plastic
Waterproofing O-ring, 2 buckles
Usable depth Up to 75 meters (246 feet)
Underwater microphone
Condenser microphone (monaural)
Controllable function
Power on/off, recording start/stop, auto focus on/off, power zooming
Dimensions



Mass Approx. 8 kg (17 lb 10 oz)
Supplied accessories
Adaptor (1)
O-rings (2)
Grease (1)
Recommended accessories
Underwater video light HVL-M20, HVL-80DA
Maintenance kit ACC-810M
Color filter VF-M150
Carrying case LCH-M40

Design and specifications are subject to change without notice.

Prerecording Checklist

To make sure that you do not miss shooting opportunities, go over the following checklist.

Item	Checkpoints
Battery pack	• Fully charged.
Video cassette	• A cassette is inserted. • Tape length will cover the planned recording time. • The tape is wound to the point where recording is to begin. • The safety tab on the cassette is in the correct position. (The window is not red.)
Microphone cable, remote control cable	• Firmly connected to the respective jacks of the video camera recorder (p.10).
Video camera recorder	• Set POWER to CAMERA (p.9). • Set STANDBY/LOCK to STANDBY (p.9). • Set to manual adjustment mode and make each setting correctly (p.9).
O-ring	• No scratches or cracks. • No dust, sand or hair around it. • Correctly set in the groove (p.8).
Buckles	• Correctly fastened (p.11).